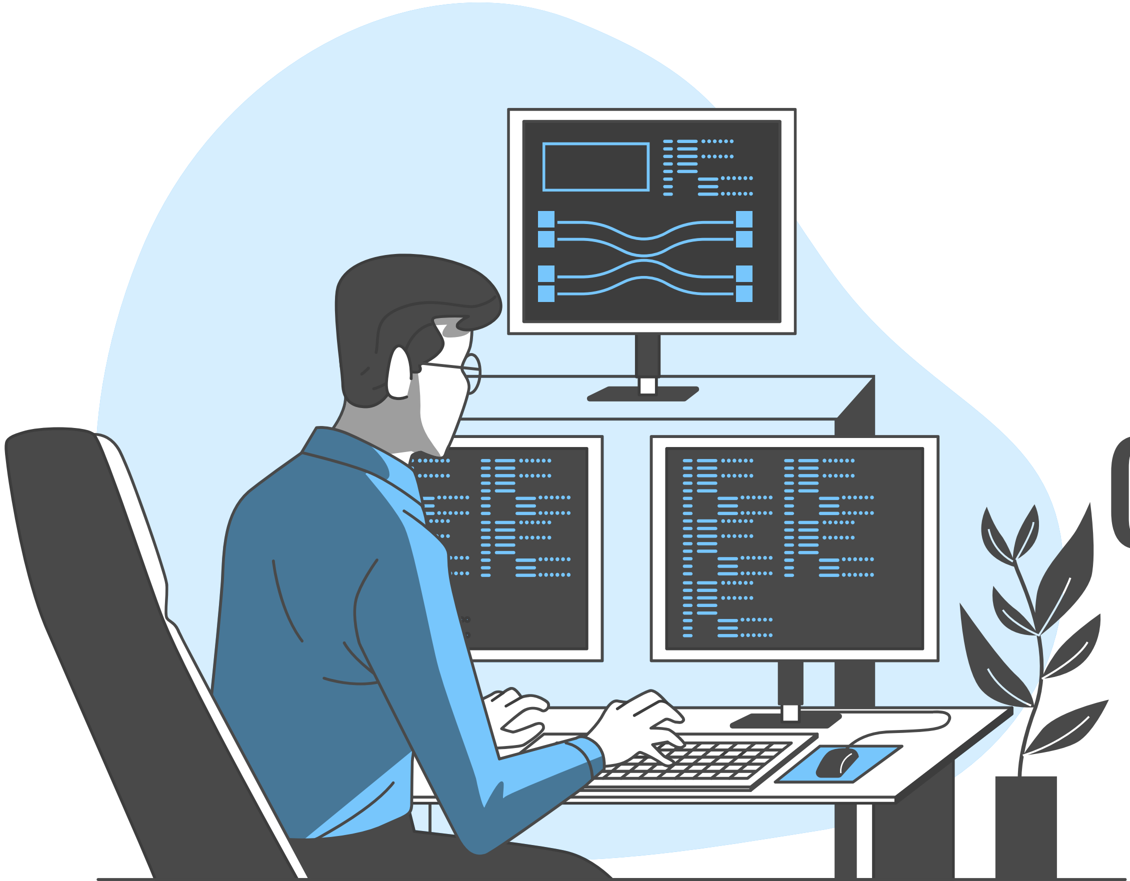


Git e Github

Módulo 1 - Introdução ao controle de versão

Objetivo do curso

Aprender como controlar as versões de seus códigos e arquivos de configuração usando sistemas de controle de versão, em especial o git.

Apresentar e demonstrar o funcionamento da plataforma de versionamento Github

Bônus:
- GitHub Student Developer Pack,
- “release the kraken”
- sorteios

Nossa agenda

01

Introdução ao controle de versão

v1 ... v2 ... v3 ... final ...
Pode não parecer, mas isso não é certo!

02

Usando o GIT localmente

Primeiros passos para saber onde foi parar aquele código que funcionava.

03

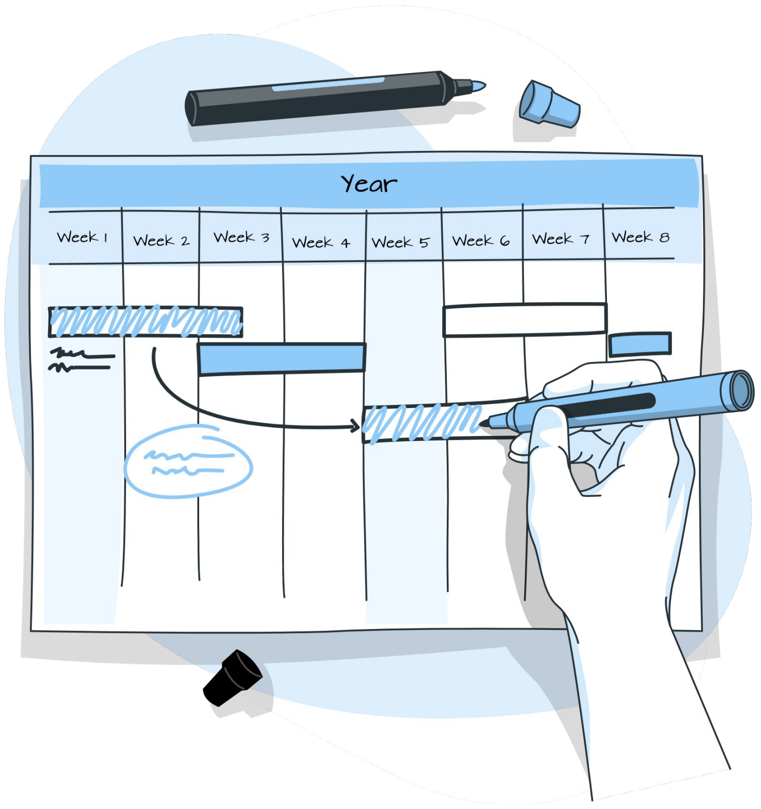
Introdução ao GITHUB

Sim, a Microsoft controla todos os códigos abertos do mundo...

04

Colaboração

Se não dá pra fazer sozinho, é melhor saber como fazer junto...



Ambiente e ferramentas utilizadas

Não se preocupe. Tudo o que vamos usar é multi-plataforma e terão links e tutoriais no SIGA

Mas, afinal, porquê estou aqui?

- Desenvolvedor desde os 14 anos (já faz muito tempo...não precisa contar)
- Trabalhou para/por Precon, Usiminas, Vallourec & Mannesmann, UFMG, Gerdau, Ford e AmBev
- Sócio fundador da Virturian Ativos Industriais
- Supervisor de desenvolvimento no UNIFAGOC

01 Introdução ao controle de versão

01 – Introdução ao controle de versão

Aplicação

Artefatos de desenvolvimento e demais arquivos relativos à aplicação

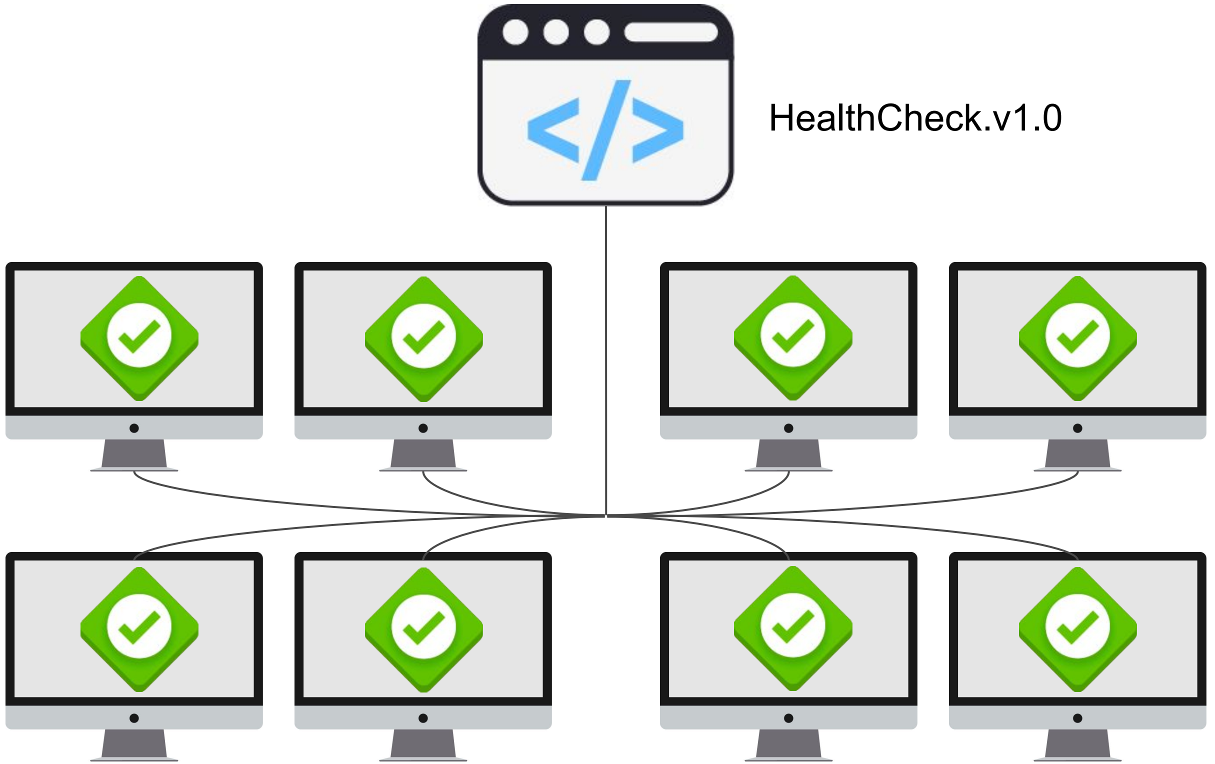
Infraestrutura

Configurações de máquinas, rotas de rede, ip's e MAC's dos equipamentos...

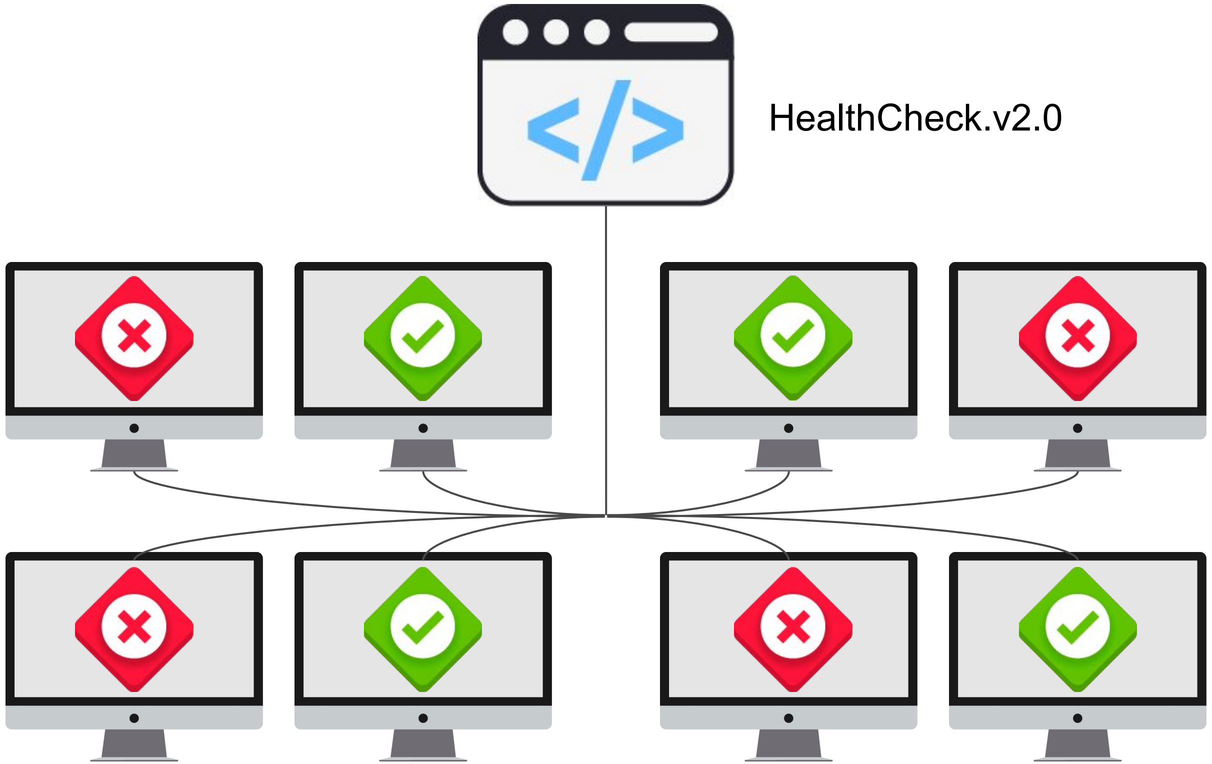
Documentação

Histórico de modificações de requisitos de software e regras de negócio

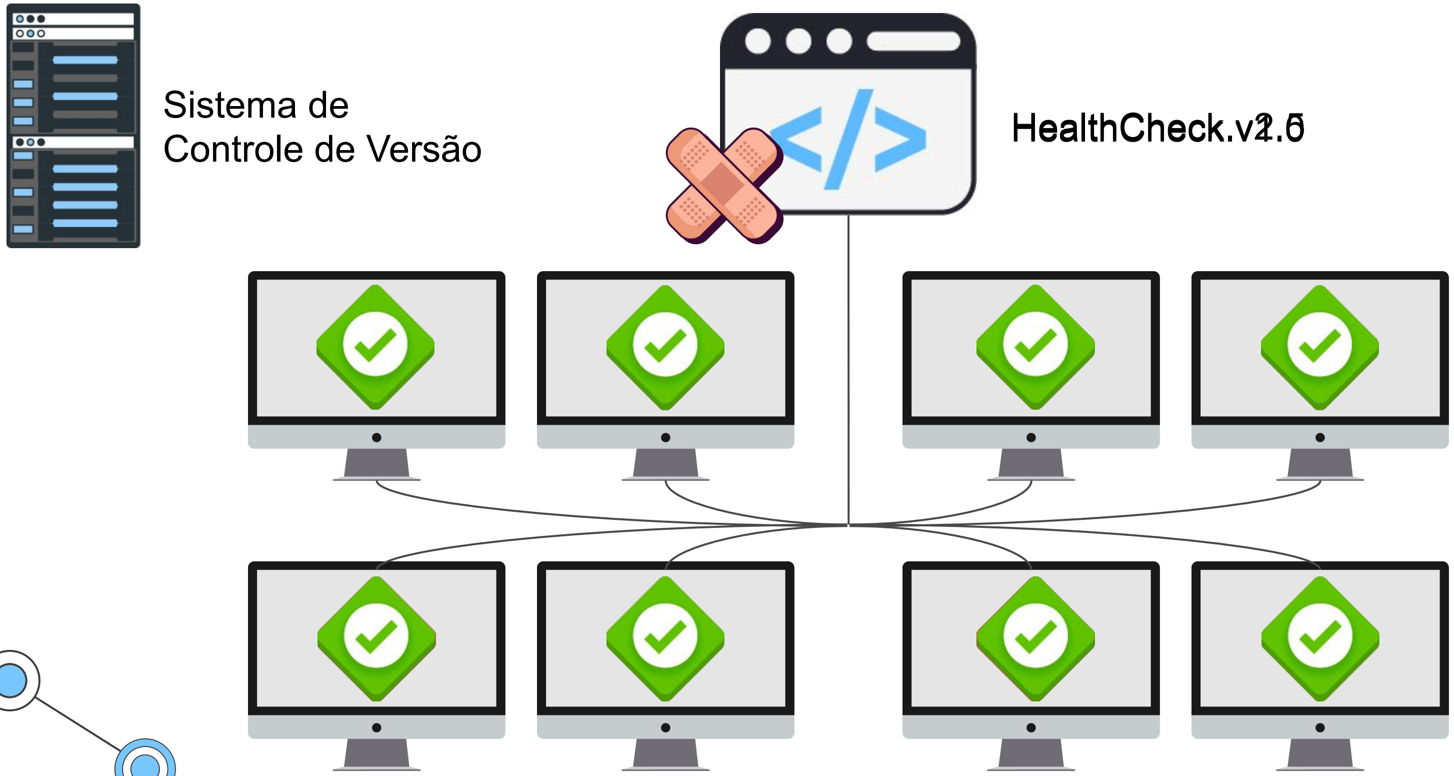
01 – Introdução ao controle de versão



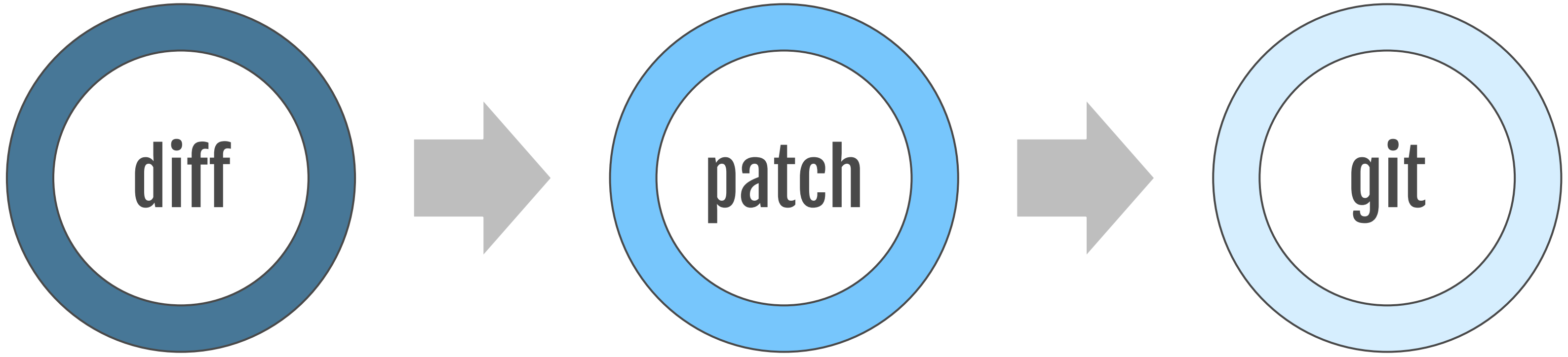
01 – Introdução ao controle de versão



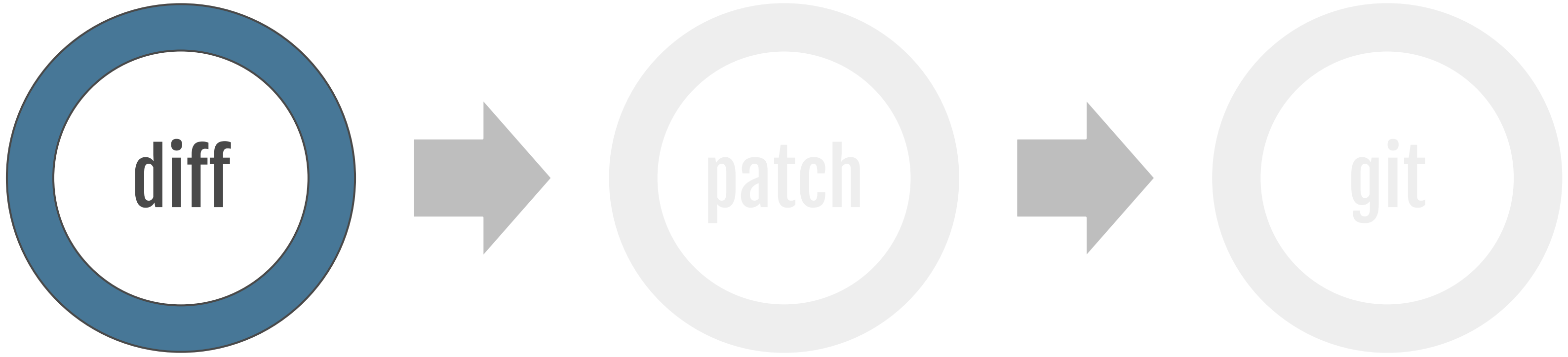
01 – Introdução ao controle de versão



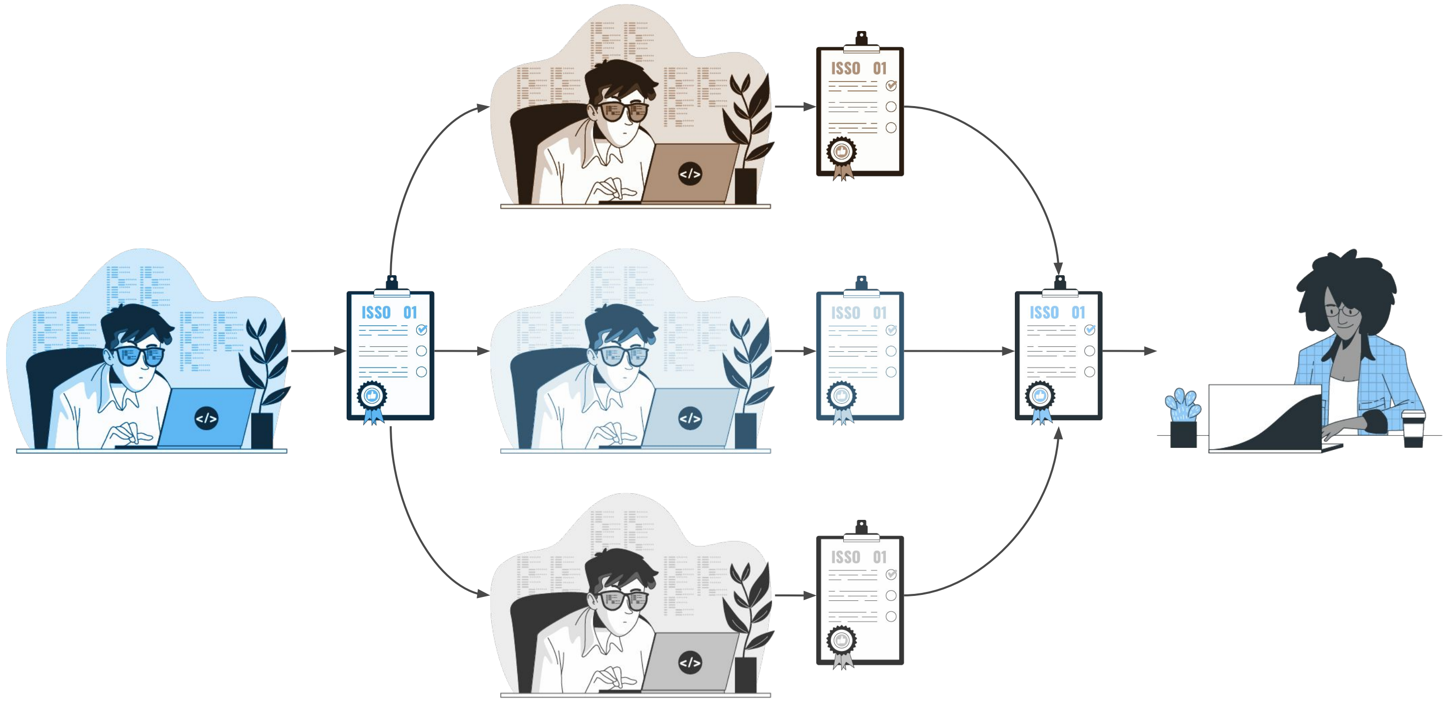
01 – Introdução ao controle de versão



01 – Introdução ao controle de versão



01 – Introdução ao controle de versão



Histórico de Cópias

01 – Introdução ao controle de versão

Histórico de Cópias

Manual

Todo o controle de o que foi feito tem que ser acompanhado por uma pessoa
...

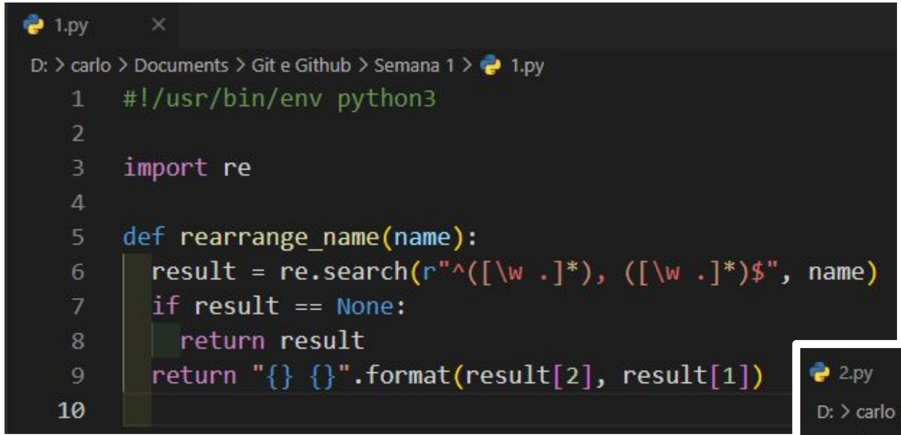
Alto custo

Mesmo que você tenha modificado apenas uma pequena parte, você precisa manter todo o histórico
...

Pouco detalhado

Saber quem fez qual parte exige muito esforço, tempo e comunicação
...

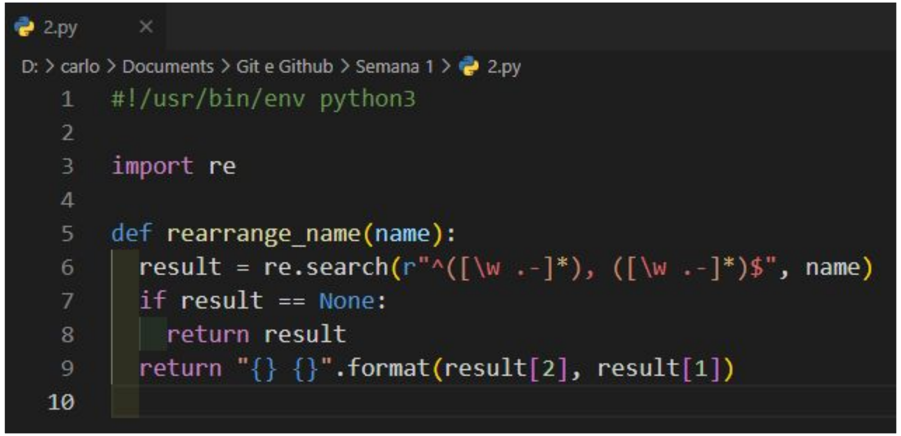
01 – Introdução ao controle de versão



1.py

D: > carlo > Documents > Git e Github > Semana 1 > 1.py

```python
#!/usr/bin/env python3

import re

def rearrange_name(name):
    result = re.search(r"^([\w .]*), ([\w .]*)$", name)
    if result == None:
        return result
    return "{} {}".format(result[2], result[1])
```

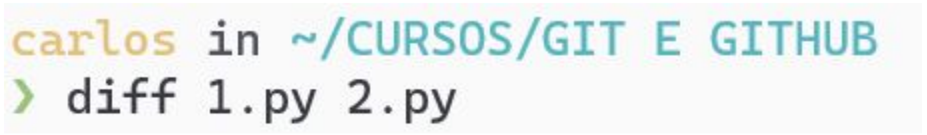


2.py

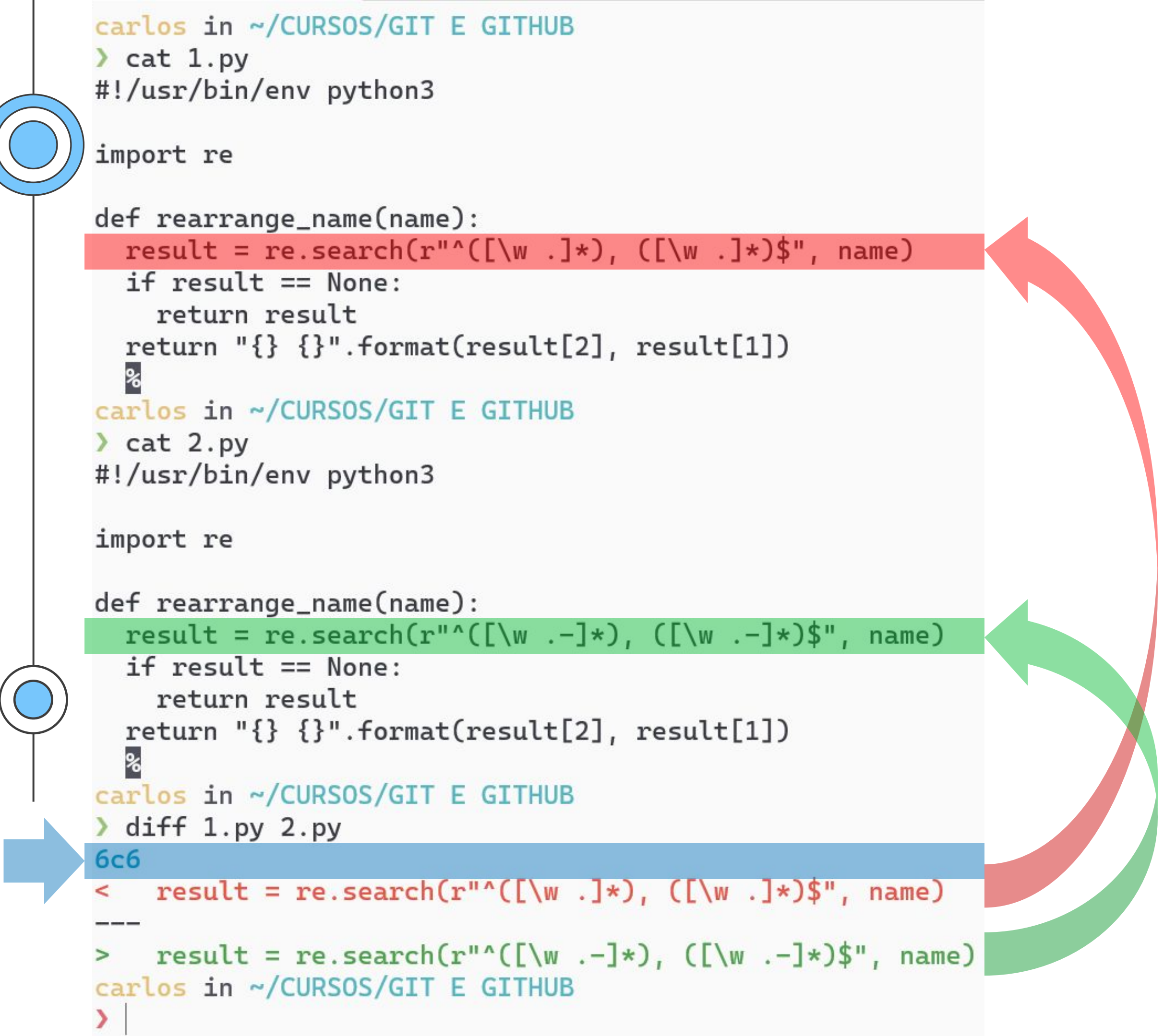
D: > carlo > Documents > Git e Github > Semana 1 > 2.py

```python
#!/usr/bin/env python3

import re

def rearrange_name(name):
    result = re.search(r"^([\w .-]*), ([\w .-]*)$", name)
    if result == None:
        return result
    return "{} {}".format(result[2], result[1])
```

01 – Introdução ao controle de versão



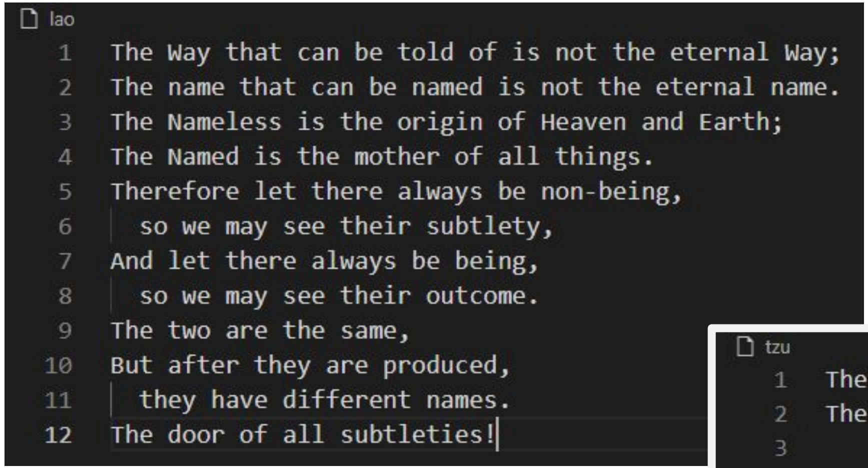
```
carlos in ~/CURSOS/GIT E GITHUB
❯ diff 1.py 2.py
```



```
carlos in ~/CURSOS/GIT E GITHUB
❯ cat 1.py
#!/usr/bin/env python3

import re

def rearrange_name(name):
  result = re.search(r"^([\w .]*), ([\w .]*)$", name)
  if result == None:
    return result
  return "{} {}".format(result[2], result[1])
%
carlos in ~/CURSOS/GIT E GITHUB
❯ cat 2.py
#!/usr/bin/env python3

import re

def rearrange_name(name):
  result = re.search(r"^([\w .-]*), ([\w .-]*)$", name)
  if result == None:
    return result
  return "{} {}".format(result[2], result[1])
%
carlos in ~/CURSOS/GIT E GITHUB
❯ diff 1.py 2.py
6c6
<   result = re.search(r"^([\w .]*), ([\w .]*)$", name)
---
>   result = re.search(r"^([\w .-]*), ([\w .-]*)$", name)
carlos in ~/CURSOS/GIT E GITHUB
❯ |
```

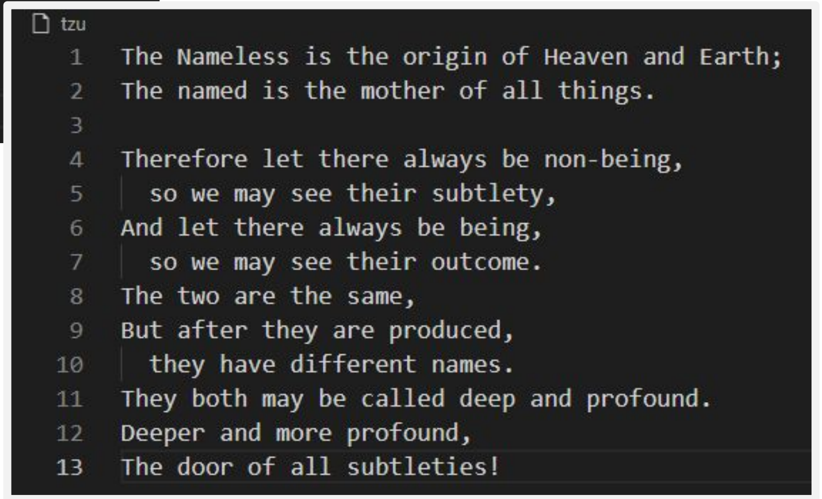
Agora ficou fácil, né?

01 – Introdução ao controle de versão



lao

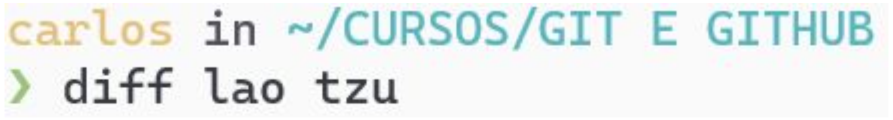
```
The Way that can be told of is not the eternal Way;
The name that can be named is not the eternal name.
The Nameless is the origin of Heaven and Earth;
The Named is the mother of all things.
Therefore let there always be non-being,
  so we may see their subtlety,
And let there always be being,
  so we may see their outcome.
The two are the same,
But after they are produced,
  they have different names.
The door of all subtleties!
```



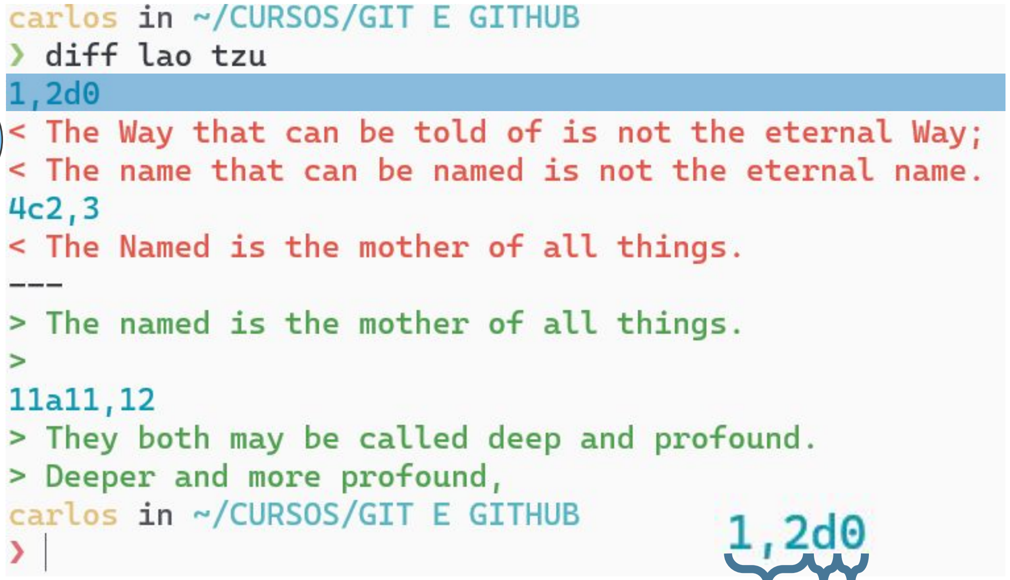
tzu

```
The Nameless is the origin of Heaven and Earth;
The named is the mother of all things.

Therefore let there always be non-being,
  so we may see their subtlety,
And let there always be being,
  so we may see their outcome.
The two are the same,
But after they are produced,
  they have different names.
They both may be called deep and profound.
Deeper and more profound,
The door of all subtleties!
```

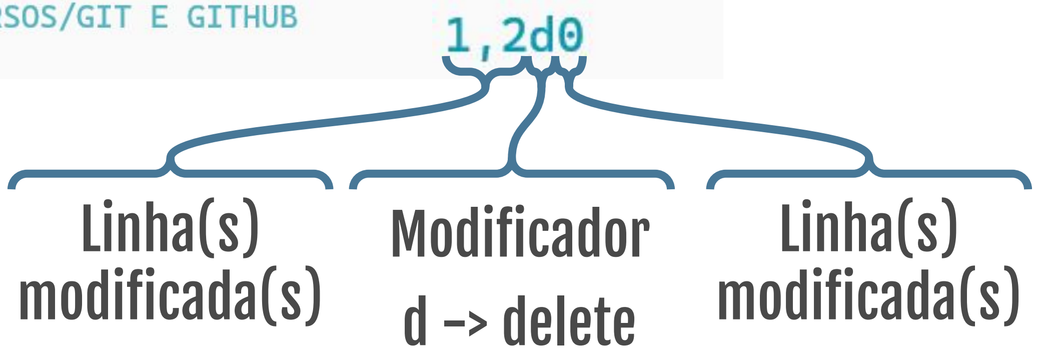
01 – Introdução ao controle de versão

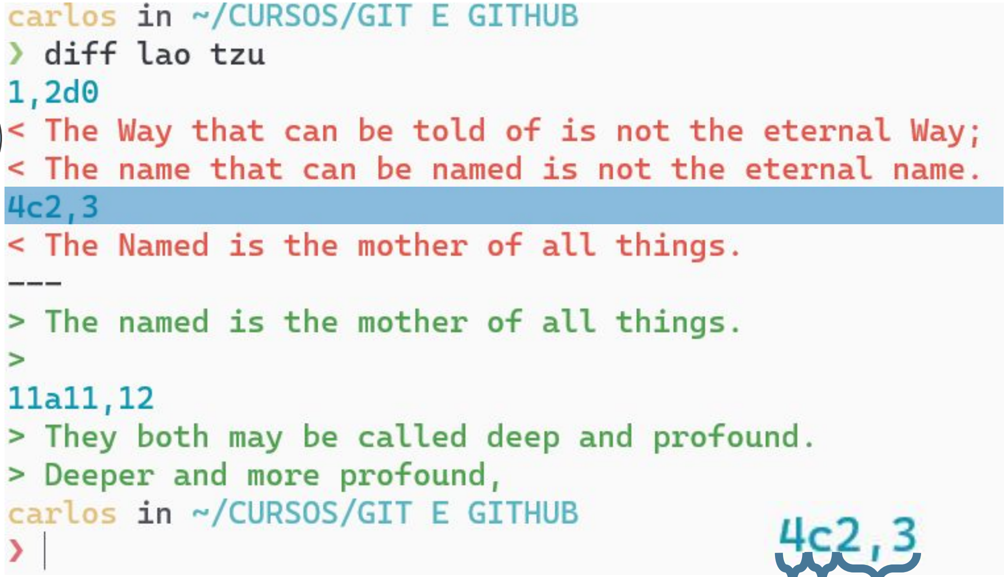


```
carlos in ~/CURSOS/GIT E GITHUB
❯ diff lao tzu
```

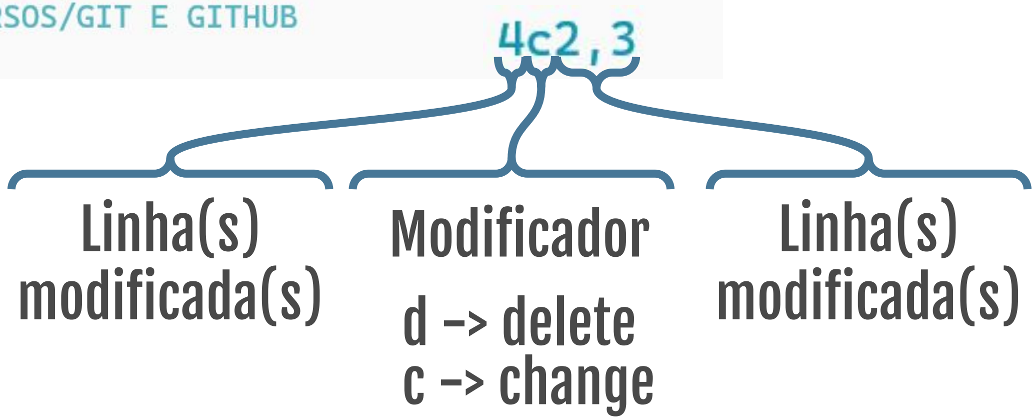


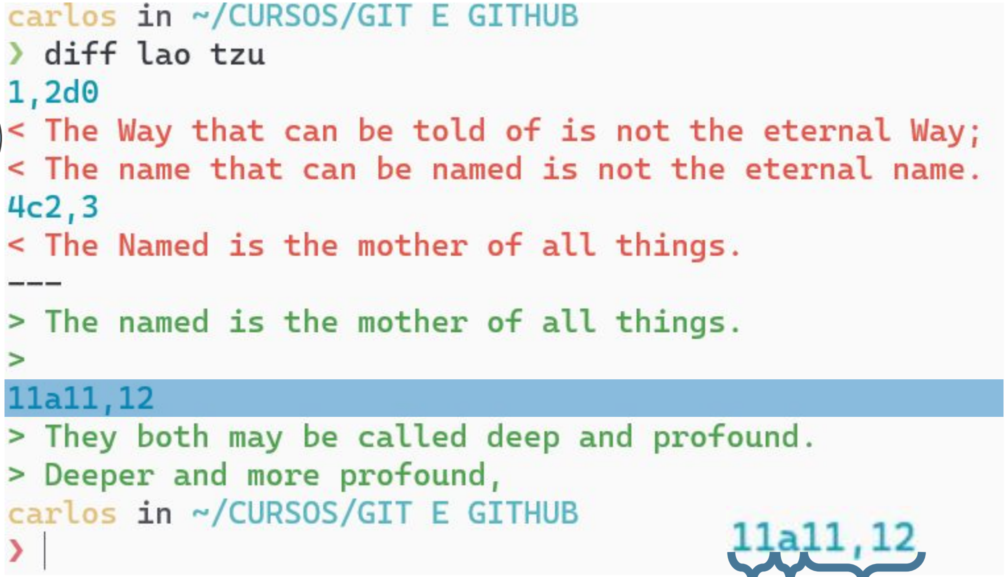
```
carlos in ~/CURSOS/GIT E GITHUB
❯ diff lao tzu
1,2d0
< The Way that can be told of is not the eternal Way;
< The name that can be named is not the eternal name.
4c2,3
< The Named is the mother of all things.
---
> The named is the mother of all things.
>
11a11,12
> They both may be called deep and profound.
> Deeper and more profound,
carlos in ~/CURSOS/GIT E GITHUB
❯ |
```





```
carlos in ~/CURSOS/GIT E GITHUB
❯ diff lao tzu
1,2d0
< The Way that can be told of is not the eternal Way;
< The name that can be named is not the eternal name.
4c2,3
< The Named is the mother of all things.
---
> The named is the mother of all things.
>
11a11,12
> They both may be called deep and profound.
> Deeper and more profound,
carlos in ~/CURSOS/GIT E GITHUB
❯ |
```





```
carlos in ~/CURSOS/GIT E GITHUB
❯ diff lao tzu
1,2d0
< The Way that can be told of is not the eternal Way;
< The name that can be named is not the eternal name.
4c2,3
< The Named is the mother of all things.
---
> The named is the mother of all things.
>
11a11,12
> They both may be called deep and profound.
> Deeper and more profound,
carlos in ~/CURSOS/GIT E GITHUB
❯ |
```

$\underbrace{11}\underbrace{a}\underbrace{11,12}$

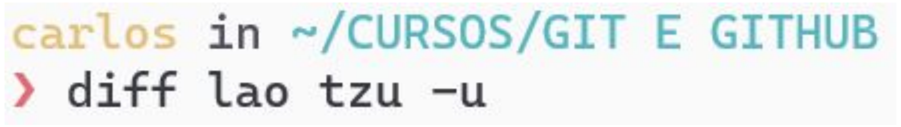
Linha(s) modificada(s)

Modificador

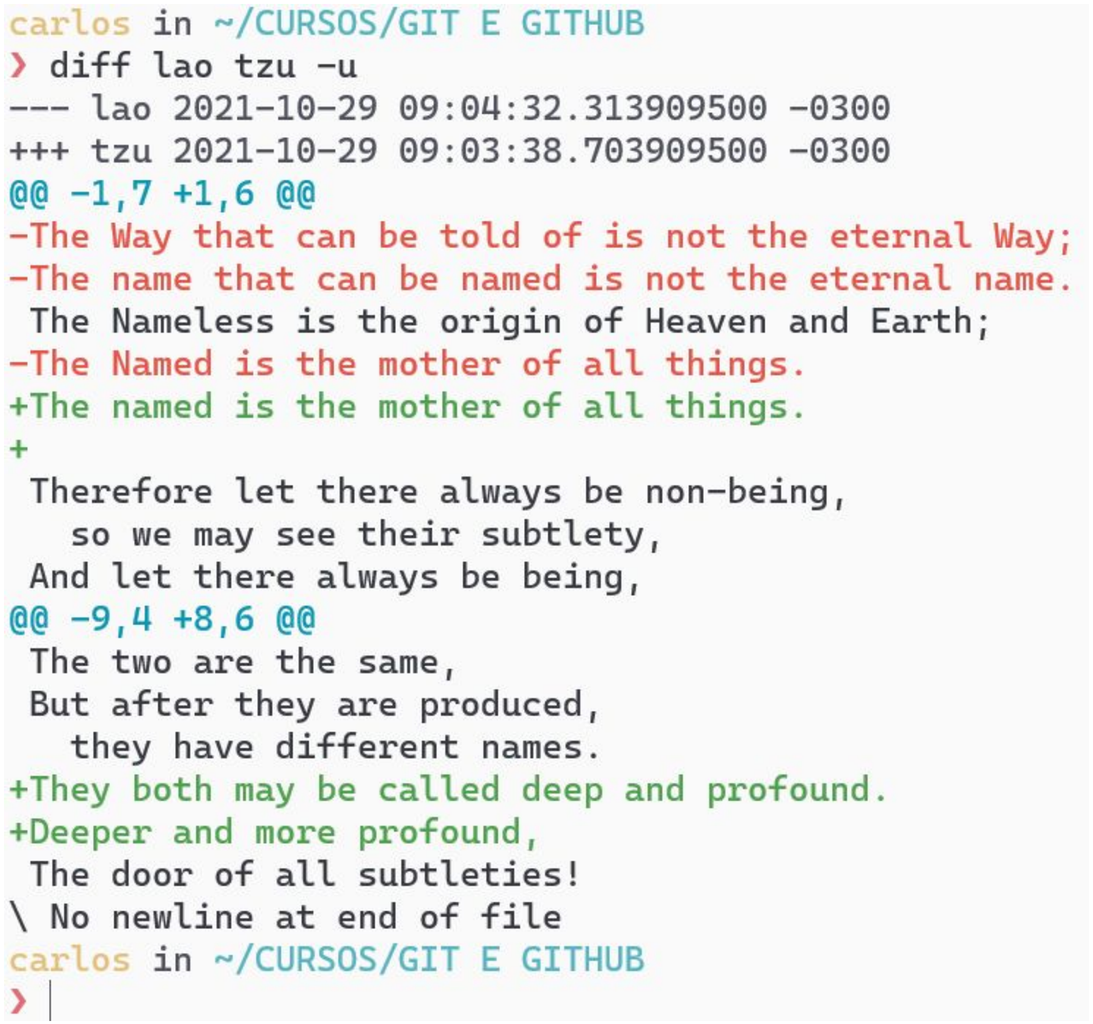
d -> delete
c -> change
a -> append

Linha(s) modificada(s)

01 – Introdução ao controle de versão

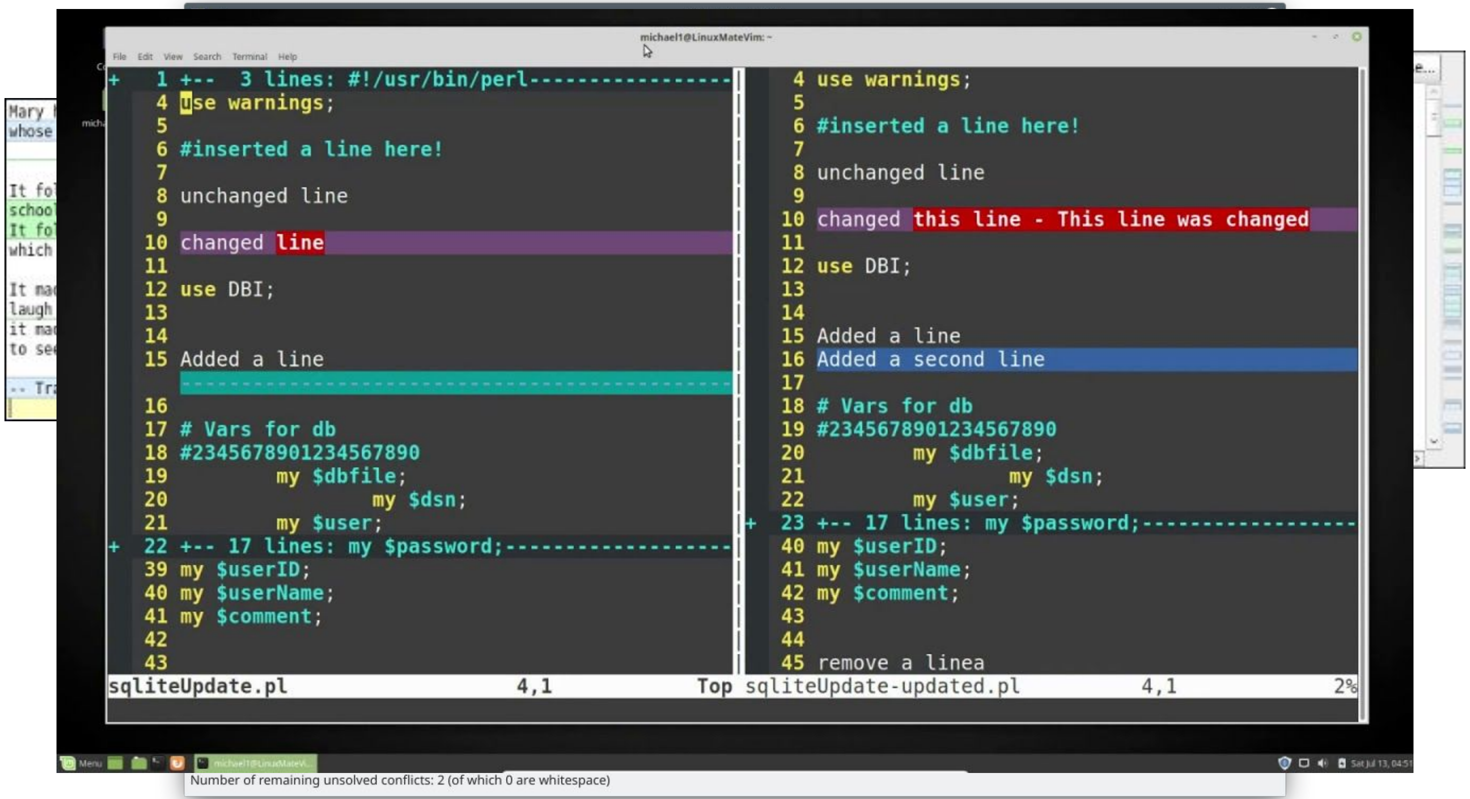


```
carlos in ~/CURSOS/GIT E GITHUB
❯ diff lao tzu -u
```



```
carlos in ~/CURSOS/GIT E GITHUB
❯ diff lao tzu -u
--- lao 2021-10-29 09:04:32.313909500 -0300
+++ tzu 2021-10-29 09:03:38.703909500 -0300
@@ -1,7 +1,6 @@
-The Way that can be told of is not the eternal Way;
-The name that can be named is not the eternal name.
 The Nameless is the origin of Heaven and Earth;
-The Named is the mother of all things.
+The named is the mother of all things.
+
 Therefore let there always be non-being,
   so we may see their subtlety,
 And let there always be being,
@@ -9,4 +8,6 @@
 The two are the same,
 But after they are produced,
   they have different names.
+They both may be called deep and profound.
+Deeper and more profound,
 The door of all subtleties!
\ No newline at end of file
carlos in ~/CURSOS/GIT E GITHUB
❯ 
```

01 – Introdução ao controle de versão

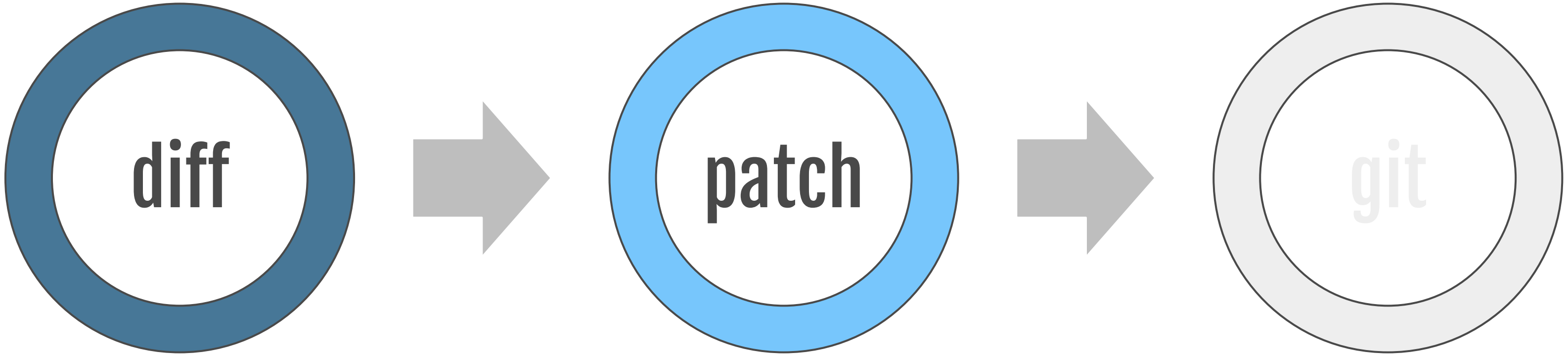


```
+--  3 lines: #!/usr/bin/perl-----------------
use warnings;

#inserted a line here!

unchanged line

changed line

use DBI;


Added a line
-----------------------------------------------

# Vars for db
#2345678901234567890
        my $dbfile;
                my $dsn;
        my $user;
+--  17 lines: my $password;------------------
my $userID;
my $userName;
my $comment;


sqliteUpdate.pl                    4,1          Top
```

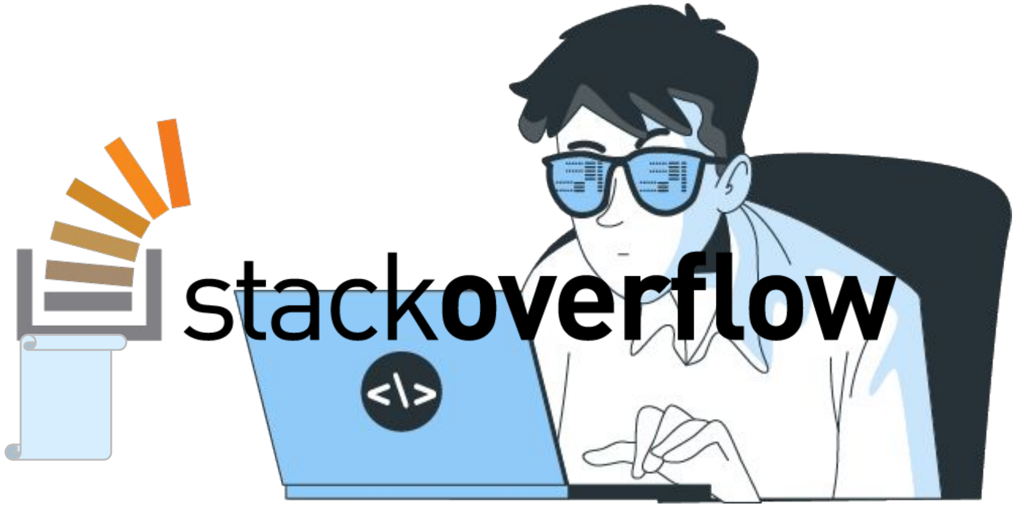
```
use warnings;

#inserted a line here!

unchanged line

changed this line - This line was changed

use DBI;


Added a line
Added a second line

# Vars for db
#2345678901234567890
        my $dbfile;
                my $dsn;
        my $user;
+--  17 lines: my $password;------------------
my $userID;
my $userName;
my $comment;


remove a linea
sqliteUpdate-updated.pl            4,1           2%
```

Number of remaining unsolved conflicts: 2 (of which 0 are whitespace)

01 – Introdução ao controle de versão



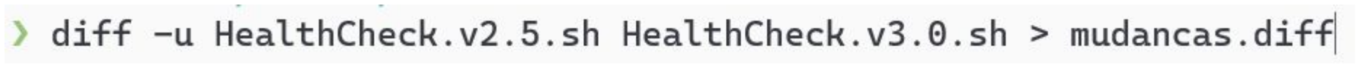
01 - Introdução ao controle de versão



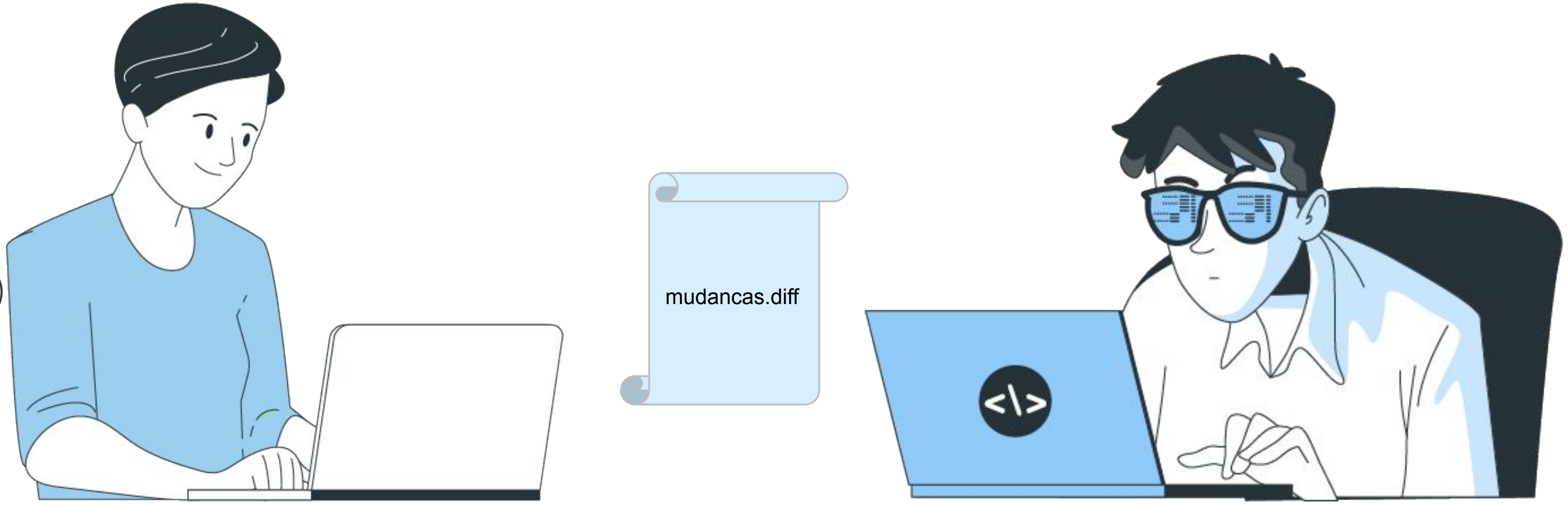
01 – Introdução ao controle de versão

Ele esqueceu de desalocar a memória de novo... e tá faltando a condição desse *if* aqui ... e precisa melhorar a formatação também....

01 - Introdução ao controle de versão

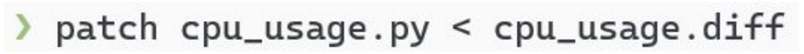


```
❯ diff -u HealthCheck.v2.5.sh HealthCheck.v3.0.sh > mudancas.diff
```

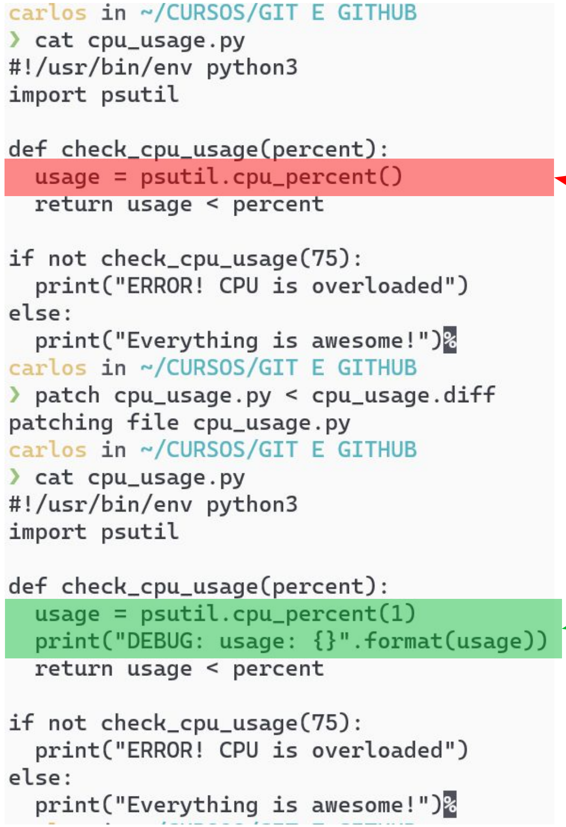


01 – Introdução ao controle de versão

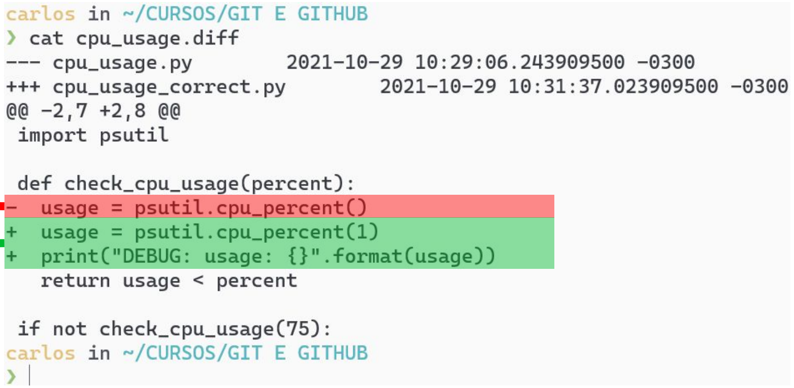
patch



```
❯ patch cpu_usage.py < cpu_usage.diff
```



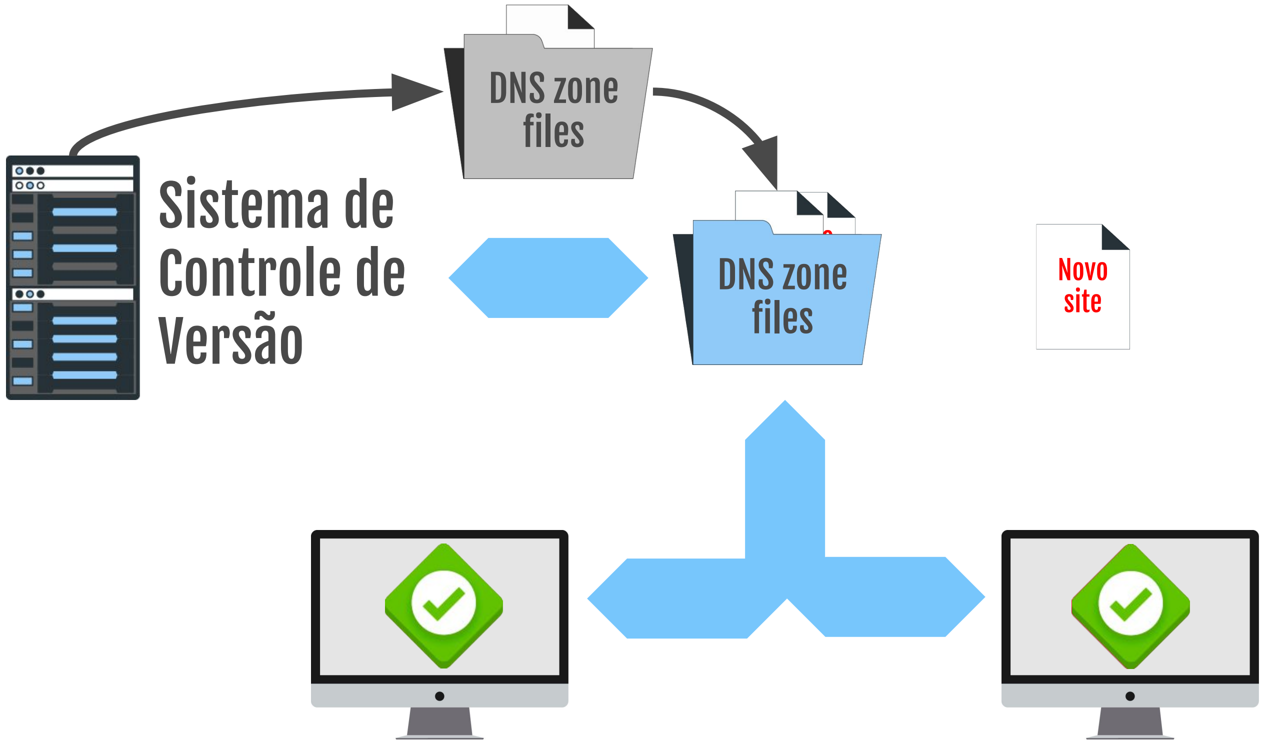
```
carlos in ~/CURSOS/GIT E GITHUB
❯ cat cpu_usage.py
#!/usr/bin/env python3
import psutil

def check_cpu_usage(percent):
  usage = psutil.cpu_percent()
  return usage < percent

if not check_cpu_usage(75):
  print("ERROR! CPU is overloaded")
else:
  print("Everything is awesome!")%
carlos in ~/CURSOS/GIT E GITHUB
❯ patch cpu_usage.py < cpu_usage.diff
patching file cpu_usage.py
carlos in ~/CURSOS/GIT E GITHUB
❯ cat cpu_usage.py
#!/usr/bin/env python3
import psutil

def check_cpu_usage(percent):
  usage = psutil.cpu_percent(1)
  print("DEBUG: usage: {}".format(usage))
  return usage < percent

if not check_cpu_usage(75):
  print("ERROR! CPU is overloaded")
else:
  print("Everything is awesome!")%
```



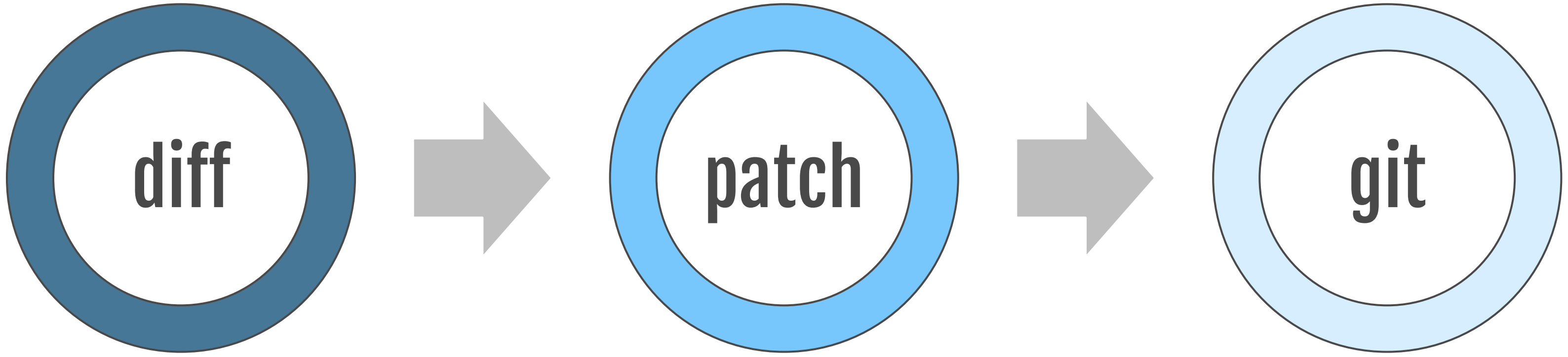
```
carlos in ~/CURSOS/GIT E GITHUB
❯ cat cpu_usage.diff
--- cpu_usage.py        2021-10-29 10:29:06.243909500 -0300
+++ cpu_usage_correct.py        2021-10-29 10:31:37.023909500 -0300
@@ -2,7 +2,8 @@
 import psutil

 def check_cpu_usage(percent):
-  usage = psutil.cpu_percent()
+  usage = psutil.cpu_percent(1)
+  print("DEBUG: usage: {}".format(usage))
   return usage < percent

 if not check_cpu_usage(75):
carlos in ~/CURSOS/GIT E GITHUB
❯
```

Sistema de Controle de Versão

01 – Introdução ao controle de versão



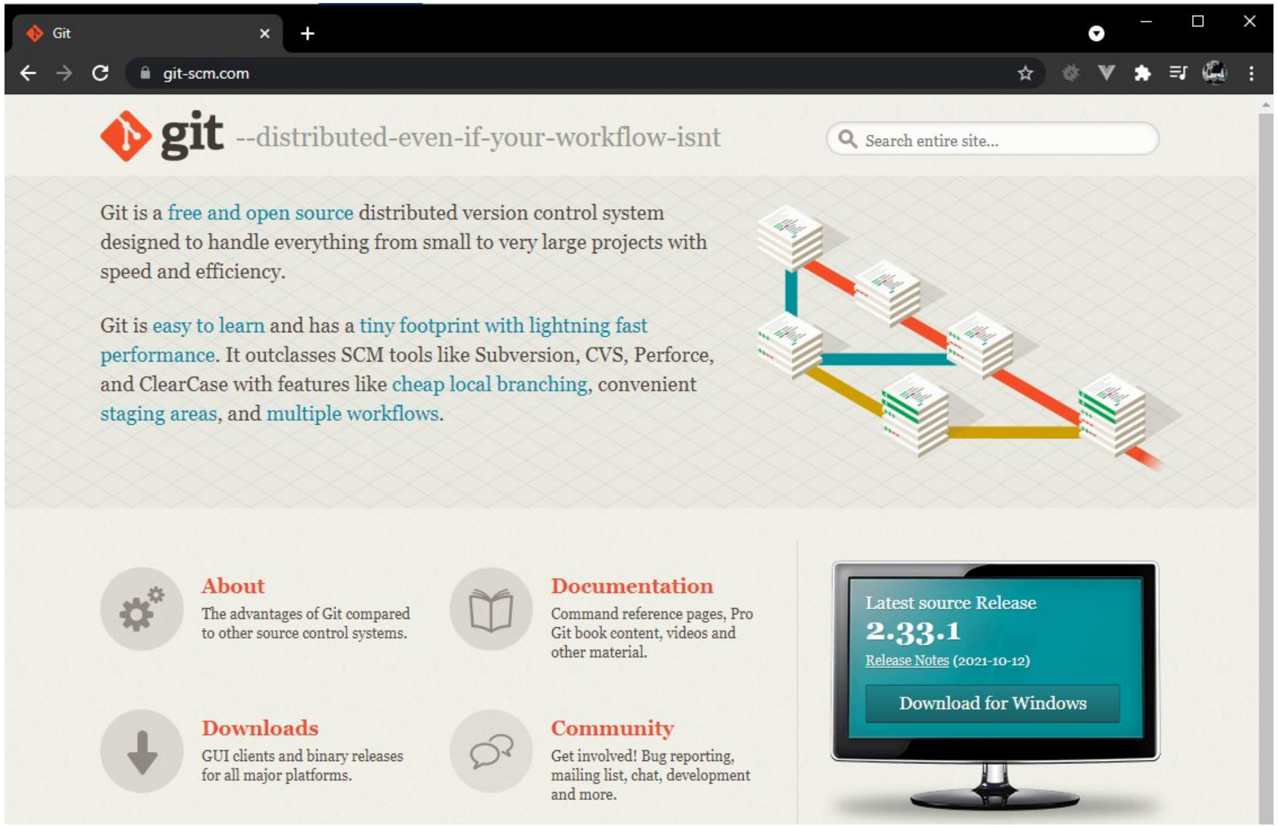
01 – Introdução ao controle de versão



01 – Introdução ao controle de versão

git

01 – Introdução ao controle de versão



git-scm.com

git --distributed-even-if-your-workflow-isnt

Search entire site...

Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

Git is easy to learn and has a tiny footprint with lightning fast performance. It outclasses SCM tools like Subversion, CVS, Perforce, and ClearCase with features like cheap local branching, convenient staging areas, and multiple workflows.

About
The advantages of Git compared to other source control systems.

Documentation
Command reference pages, Pro Git book content, videos and other material.

Downloads
GUI clients and binary releases for all major platforms.

Community
Get involved! Bug reporting, mailing list, chat, development and more.

Latest source Release
2.33.1
Release Notes (2021-10-12)
Download for Windows

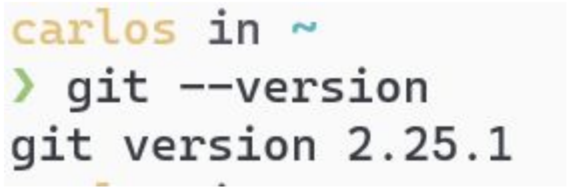
01 – Introdução ao controle de versão

SUBVERSION

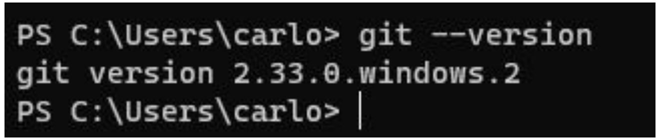
mercurial

Instalando o GIT

01 – Introdução ao controle de versão

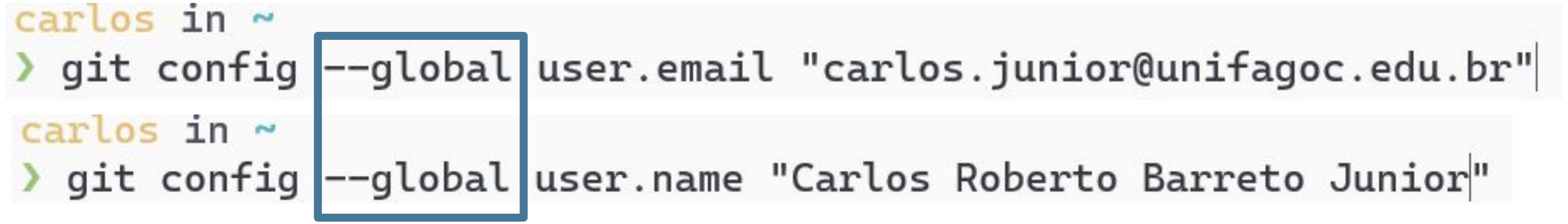


```
carlos in ~
❯ git --version
git version 2.25.1
```



```
PS C:\Users\carlo> git --version
git version 2.33.0.windows.2
PS C:\Users\carlo>
```

01 – Introdução ao controle de versão



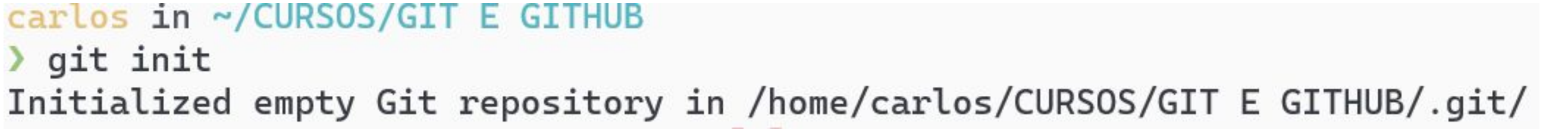
```
carlos in ~
❯ git config --global user.email "carlos.junior@unifagoc.edu.br"
carlos in ~
❯ git config --global user.name "Carlos Roberto Barreto Junior"
```

01 – Introdução ao controle de versão

Repositório Local

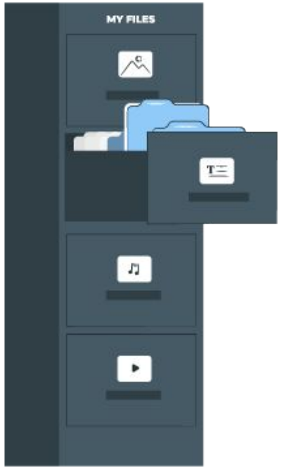
Repositório Remoto

01 – Introdução ao controle de versão



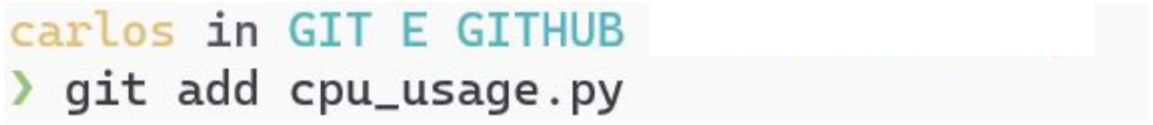
```
carlos in ~/CURSOS/GIT E GITHUB
❯ git init
Initialized empty Git repository in /home/carlos/CURSOS/GIT E GITHUB/.git/
```

Diretório GIT



Árvore de Trabalho

01 – Introdução ao controle de versão



```
carlos in GIT E GITHUB
❯ git add cpu_usage.py
```

01 – Introdução ao controle de versão

Staging Area (Index)

É uma estrutura de arquivos mantida pelo GIT que contém todas as informações sobre quais arquivos e mudanças serão enviados no próximo commit

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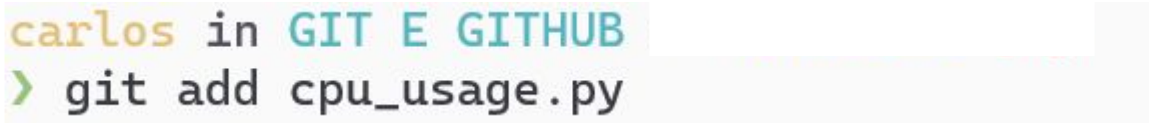
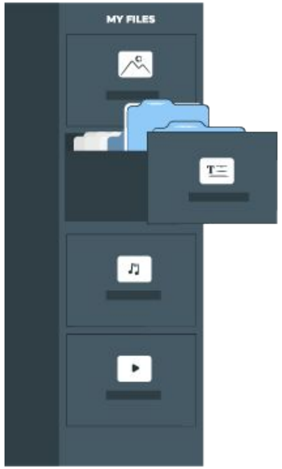
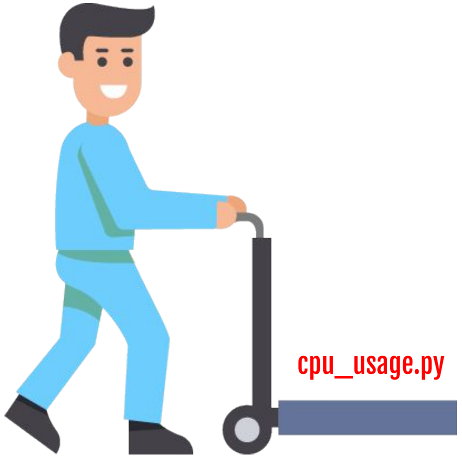


```
carlos in GIT E GITHUB
❯ git add cpu_usage.py
```

Diretório GIT



Staging Area



Árvore de Trabalho

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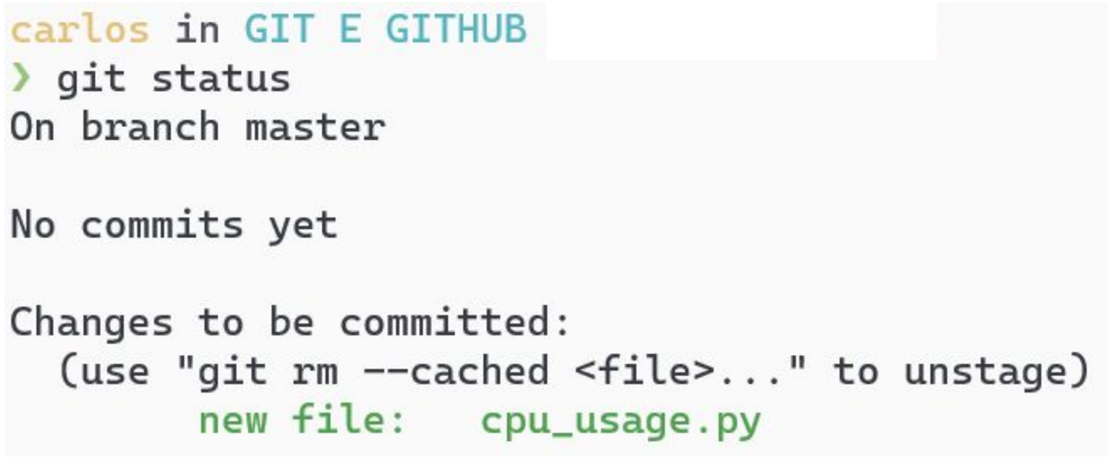
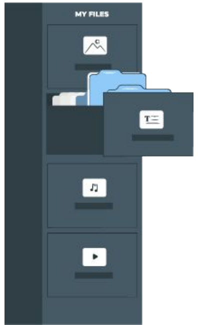
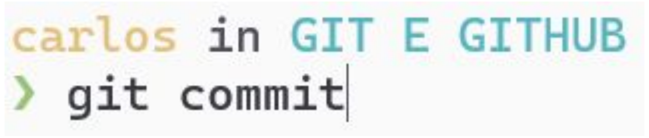


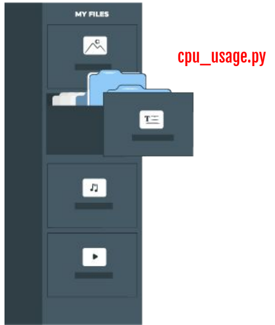
```
carlos in GIT E GITHUB
❯ git status
On branch master

No commits yet

Changes to be committed:
  (use "git rm --cached <file>..." to unstage)
        new file:   cpu_usage.py
```



01 – Introdução ao controle de versão



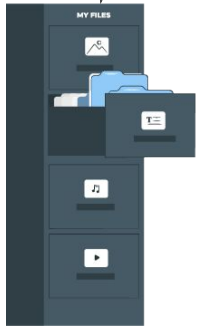
```
carlos in GIT E GITHUB
❯ git commit
```



01 – Introdução ao controle de versão

untracked

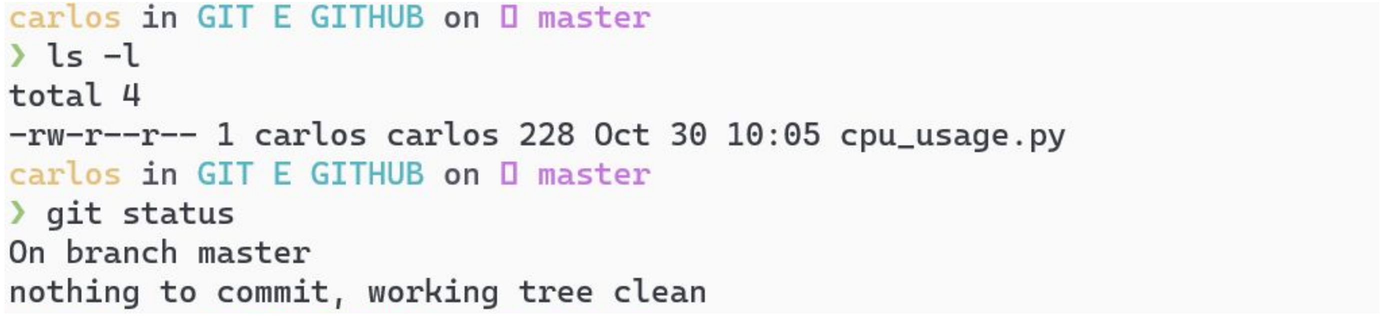
commited



staged

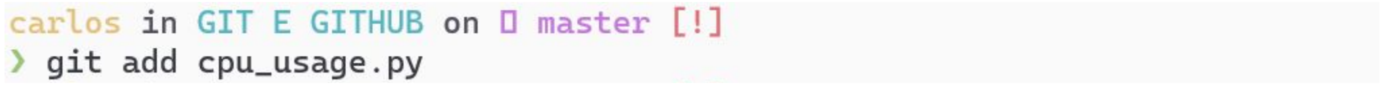
modified

01 – Introdução ao controle de versão



```
carlos in GIT E GITHUB on  master
❯ ls -l
total 4
-rw-r--r-- 1 carlos carlos 228 Oct 30 10:05 cpu_usage.py
carlos in GIT E GITHUB on  master
❯ git status
On branch master
nothing to commit, working tree clean
```

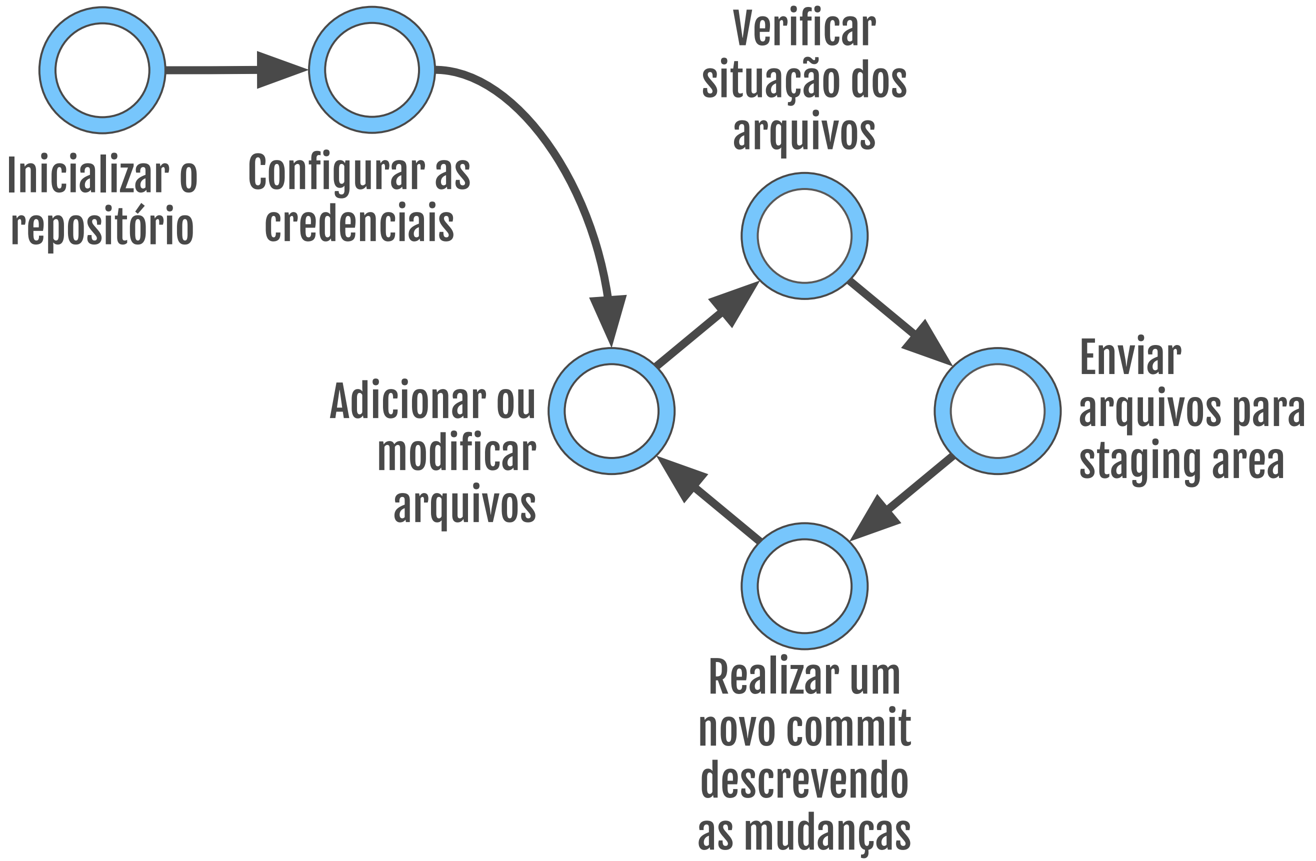
01 – Introdução ao controle de versão



```
carlos in GIT E GITHUB on  master [!]
❯ git add cpu_usage.py
```

git workflow

01 - Introdução ao controle de versão


Inicializar o repositório
Configurar as credenciais
Verificar situação dos arquivos
Enviar arquivos para staging area
Realizar um novo commit descrevendo as mudanças
Adicionar ou modificar arquivos

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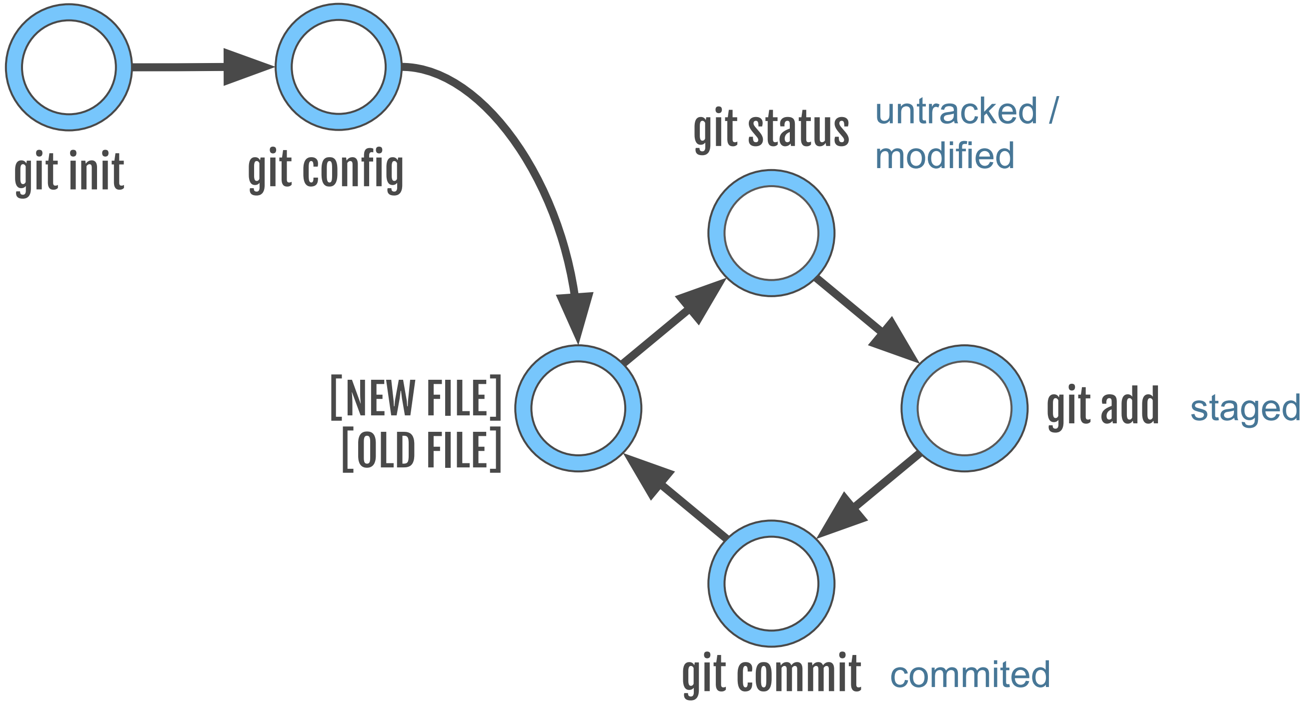
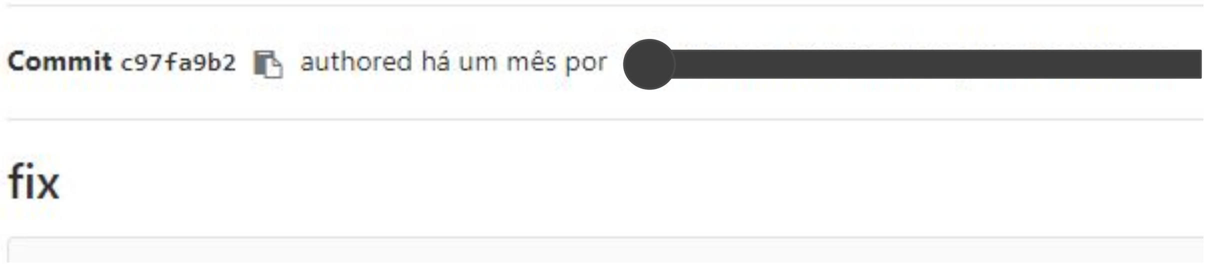


01 - Introdução ao controle de versão

Boas práticas para um commit

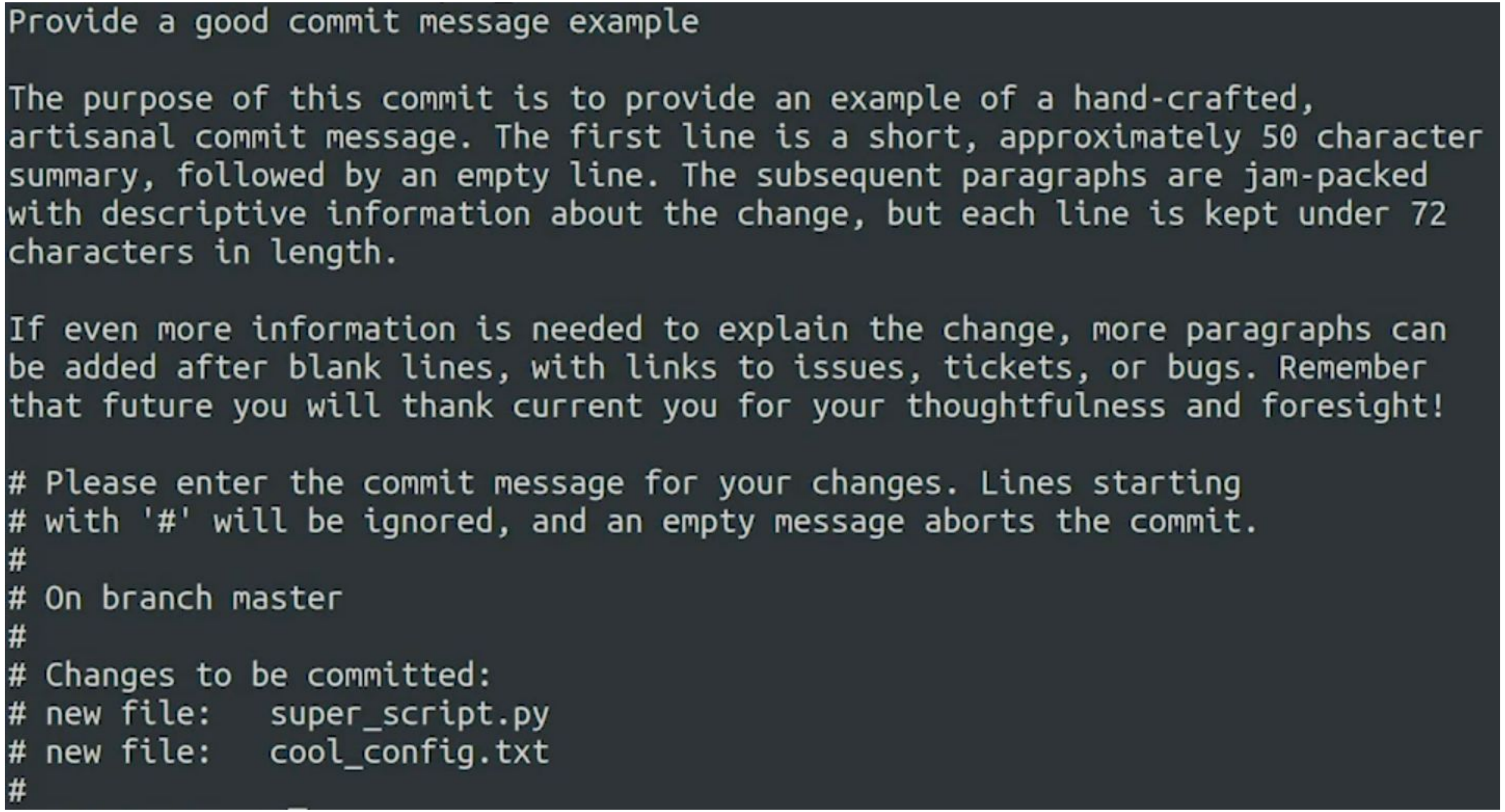
- Primeira linha com não mais de 50 caracteres
- Pule a segunda linha
- Da terceira para frente, descreva com o máximo de informações técnicas possíveis o quê foi realizado na modificação. Lembre-se o próximo a pegar o código, com certeza, será uma pessoa diferente da que pegou agora.
- Siga padrões de commit utilziados pela comunidade.

https://www.conventionalcommits.org/pt-br/v1.0.0/



Commit `c97fa9b2` authored há um mês por [redacted]

fix



```
Provide a good commit message example

The purpose of this commit is to provide an example of a hand-crafted,
artisanal commit message. The first line is a short, approximately 50 character
summary, followed by an empty line. The subsequent paragraphs are jam-packed
with descriptive information about the change, but each line is kept under 72
characters in length.

If even more information is needed to explain the change, more paragraphs can
be added after blank lines, with links to issues, tickets, or bugs. Remember
that future you will thank current you for your thoughtfulness and foresight!

# Please enter the commit message for your changes. Lines starting
# with '#' will be ignored, and an empty message aborts the commit.
#
# On branch master
#
# Changes to be committed:
# new file:   super_script.py
# new file:   cool_config.txt
#
```

git log

Thanks!

Até a próxima!

13 de novembro

14h